Connecticut Historical Society
BULLETIN

Volume 14 Hartford, April, 1949 Number 2

Matthew Grant's compass and chain.
Deposited by Wadsworth Atheneum.

COLONIAL SURVEYING INSTRUMENTS

Contributed by Newton C. Brainard

When our ancestors established settlements in the Connecticut wilderness, one of their first activities was the establishment of boundaries and the division of the available lands. This made necessary some form of a survey. The home lots were laid out first and from time to time the outlying or "common lands" were divided among the citizens. In the case of these latter lots, the boundaries were usually marked by a "stick and stones" at the angles of the lot. Perhaps few persons realize that after almost three hundred years many of these original heaps of stones are still the boundaries of woodland properties, even though the sticks have rotted long ago.

The early surveyor was rarely trained professionally to this profession but was probably one of the more intelligent citizens, with a taste for mathematics. His instruments were crude compared to those now used and often made by the local clockmaker. They consisted of a surveyor's compass, or circumferentor, which is defined in Webster's Dictionary as "a horizontal compass with diametral projecting arms carrying each a vertical slit sight." In addition he had a chain for measuring distances and some kind of a rule for drawing his map. These instruments were treated with respect, and perhaps with awe, so that several of them have been preserved to this day. The Connecticut Historical Society is fortunate in having in its collections three compasses, a chain and a brass rule. Another pair of compasses is on deposit at the Lee House of the East Lyme Historical Society.

There is reason to suppose that the oldest compass was the property of Matthew Grant, the first Town Clerk, and, for over forty years, the Town Surveyor of Windsor. John A. Stoughton, the historian of East Windsor, records in 1883 that he found this compass and chain, much dilapidated, in an old house occupied by the lineal descendants of Matthew Grant, and in all probability it belonged to the old surveyor. Matthew Grant laid out the lands for the first settlement at Windsor, and if this was his compass, as seems probable, we have here a relic going back to one of the original settlements in our State.

It is a primitive instrument. The compass base is 6″ in diameter and the distance between sights is 11½″. It is the only one of the compasses which has its tripod. This is of hickory, with a brass top to which the compass is screwed. The lower extensions of the legs are missing, below the brass ferules. The brass used is all sheet brass and there is no engraving, in the strict sense of the word, on the instrument. The circles and degrees are laid out and scratched with a draftsman's compass. The maker appears to have experienced difficulties in making the compass bowl and accomplished it by casting a lead ring of about one-half inch square section and riveting it to the flat bottom plate. There is no indication that the instrument ever had a glass face to protect the needle, which, incidentally, is missing. The degrees are not engraved but stamped on the lead ring. The sights do not fold but fasten onto a cross bar by dovetails. This cross bar runs below the bottom plate of the compass. The sights are the common type,—the combination of a fine slot and a place for a hair. The face of the instrument is protected by a brass cover made from a thin sheet of brass which is spun

or hammered into a shallow dome with a half-inch brass rim brazed or soldered to it at right angles. With it is the chain. This has seen so much use that it shows evidence of many replacements in its links, and those which appear to be original are so worn that they are almost ready to give way.

The second compass at Hartford, made over one hundred years later, is a much more finished instrument. On the cross bar for the sights, which is above the bowl, is engraved the former owner's name, "Ebenezer Burr, 1776," while on the face of the instrument is the maker's name, "Cordial Smith, 1775."

This instrument is 6½″ in diameter, the sight base 10″. The sights fold but have the same arrangement of a slot and hair as on the Grant instrument.

The third compass, similar to the second, though not quite so well finished, does not carry the name of the maker or the owner. However, it is contained in a homemade case of pine, on one end of which is stamped in letters about one-half inch high, similar to a branding iron, the name "A. KING", and it came to the Society from Suffield.

This compass is without doubt the one listed in the inventory of the estate of Dr. Alexander King (October 26, 1737–October 12, 1802). Dr. King was a Selectman and Town Clerk of Suffield for many years, and was also a delegate to the convention at Hartford which ratified the Constitution of the United States.

The instrument is 6¼″ in diameter, all brass, with the inside bottom plate of the bowl silvered. The sight base is 9½″. The pine case, measuring 7x10½″, is cut out of two pieces of one inch plank and the top is held in position by two pegs. Across the top is an attempt at ornamentation by a strap filled with brass tacks. The case shows no sign of ever having been painted or finished.

The fourth item at Hartford is a surveyor's rule. This is engraved with the name of the maker, "Arthur Willis, 1674." It is of cast brass, 20⅜″ long, 1¾″ wide. At either end are two holes, apparently made to receive a limb for laying off angles, and near the center are two holes which appear to have been for a handle. On the front edge are laid off angle measurements and on the top face are scales for various fractions of an inch from 1/32 to 1/10, laid out in decimal form. On the bottom face are two scales, one of which carries 1/8 and 1/16 divisions; the other 1/10 and 1/20 divisions. At the ends of both of these are decimal diagonal scales which enable one to read measurements down to 1/100 of the above units. The instrument reads accurately down to a fiftieth of an inch when compared with the latest steel scale rules.

Attempts have been made to find out who Arthur Willis was and to find out just how this rule was used. An extensive correspondence with various sources of information, such as the United States Bureau of Standards, was completely unsuccessful. The rule was among the possessions of Miss Lucy A. Brainard, long a member of the Society, and by family traditions, was the property of Nathaniel Foote, son of Quartermaster Nathaniel Foote. The son was a surveyor, and an old newspaper clipping told of his

plane table being in the possession of other descendants. All trace of the plane table is now lost.

The compasses in the Lee House are said to have been used by Moses Warren, of East Lyme. In this case, tradition has it that one was used by him in surveying the Connecticut lands in the Western Reserve with Moses Cleaveland. At any rate, the compass has a curious and primitive wooden traveling case from the cover of which the base of the compass protrudes and it likewise extends through the side of a pair of saddlebags, apparently made especially to carry it.

ACCOUNTS OF A SCHOOL
In Norwich, Conn., 1775-76

*Contributed by Charles Allyn Williams**

These accounts are in the handwriting of the teacher, my great-great-grandfather, Amos Williams.[1] They were written, doubtless for his own records, in a painstaking, clear hand on a single leaf, 7⅝ x 12⅛ inches. On one side is the list of heads of families and of the amounts they were to contribute, reckoned by days of schooling for the children (possibly boys only) of the various families. It is of particular interest that the term fell in the winter between Lexington-Concord and the Declaration of Independence. The writer's name was signed twice at the head of this page, after inverting the leaf:

Amos Williams
Williams Amos[2]

An account of A School Kept at
Norwich th December 13th y 1775 it Began

	Days	S— D—F
John Eames	70	1— 5—3
Charles Avery	121	2— 6—2
William Billings	52	1— 1—1
Solomon Avery	119	2— 6—0
Daniel Chapman	46	0—11—3
Samuel Capron	140	2—11—3
Samuel Whipple	146	3— 0—3
Jasper Woodworth	88	1—10—1

* Professor emeritus, University of Illinois.

[1] Born May 19, 1754, died June 25, 1838 in Preston, Conn.; son of John Williams 2nd (July 14, 1714–Nov. 13, 1798) of Groton (North Parish), Conn., and of his wife, Mary Avery, daughter of Samuel[4] and Elizabeth[4] (Ransford) Avery. This document, and two MS "Cyphering Books" written partly for and partly by Amos Williams from 1768 on, were given me by my cousin, John Anson Williams.

[2] In the list as printed here certain marks and lines are omitted: (1) after each name a small bracket ⎱ ; (2) double or single lines drawn from the figures for "Days" to those for money; (3) the × dividing Christian names from surnames and also marked over the hyphens separating shillings, pence and farthings; (4) some figuring done with a different pen and having nothing to do with the school accounts.

Widdow Roberson	52	1— 1—0
Ebenezer Allyn	94	2— 0—0
Caleb Chapman	170	3— 6—3
Ezra Chapman	57	1— 2—1
Ephraim Jones	75	1— 6—3
Joseph Rose	101	2— 2—0
Jeremiah Pollard	113	2— 4—2
John Wight	50	1— 1—0
John Jacobs Sydalman	74	1— 6—2
John Fox	131	2— 9—0
Theophilus Stanton	37	0— 9—2
William Pollard	30	0— 7—2
Loamma Corning	21x	
Isaiah Whipple	5	0— 3—0
	1732[3]	
	21	
The Sum Total	1711	

On the upper half of the other side is the account for the cordwood used during the term. A "foot", of course, means a cord-foot (one eighth of a cord). The price was 8s. a cord.

		s—d
Norwich December 13th y 1775		
Ebenezer Allyn C[d] wood three feet @ 8/ ℔ £oo		3
Decem.[b] 14th y 1775	Samuel Whipple C[d] wood 7 feet @ /oo	7—0
Januay 31th y 1776	Ezra Chapman C[d] wood 4 feet oo—	4—0
Februay 10th y 1776	Jasper woodworth C[d] wood 4 feet oo	4—0
Februay 19th y 1776	Solomon Avery C[d] wood 4 feet	oo—4—0
		£1—2

A True Account of all the wood
Burnt at School Attested by
Amos Williams Amos Williams

On the lower part of the same page the young schoolmaster wrote the name which must have been uppermost in his mind—that of a young girl, Mabel Newton[4] (she would be nineteen on the next 24th of March). The twenty-one-year-old Amos Williams must have taken her to wife not long after the end of this school term; according to an entry by him in the family Bible their first child, Mabel[5], was born Feb. 3, 1777.

[3] This number should be 1792 and the total 1771 days.

[4] Daughter of Elijah and Ame[5] (Culver) Newton of Groton, Conn.; she died Feb. 20, 1827.

[5] She married Aug. 3, 1826, Roswell Park of Preston, Conn., and died June 17, 1840.

In time the whole lower half of this page was filled with figuring and quill tests in the form of flourishes, capital letters, a few disconnected words, and repetitions of C W (for Christopher Williams, an older brother of Amos?), also other names: Thomos (*sic*) Mayor, Thoma aboth (*sic*), T—— Williams (Thomas, a relative).

Even if Amos received the whole amount (£1 14s 11d 3f) due him for teaching the children of over a score of families during a hard winter, it was a pitifully small sum for a young teacher about to marry. This experience did not deter him from teaching school a number of winters in later years. That he kept up his interest in school-books is shown by a copy of the 1835 edition of Noah Webster's little *History of the United States,* in which he wrote his name in his 83rd year.

NEWS OF THE SOCIETY

Our President, Edgar F. Waterman, has been elected President of the recently established Connecticut League of Historical Societies. The organizational meeting was held at the New Haven Colony Historical Society, February 5, 1949, when a constitution and by-laws were adopted. Other officers elected at that meeting included six vice-presidents: Charles R. Harte, of New Haven; Elmer D. Keith, of Clintonville; Rawson W. Haddon, of Waterbury; Miss Ella F. Wood, of Hamden; Williams Haynes, of Stonington; and Miss Ruth Newcomb, of New London; Secretary, Mrs. S. H. Hilliard, of Stamford; Treasurer, William E. Finch, of Greenwich and Executive Director, Ralph W. Thomas, of New Haven.

The League offers great promise for a much closer cooperation between the various historical societies of our State in the exchange of ideas and experiences which should lead to improved administration. Mutual assistance through loans for exhibition purposes, the procurement of lecturers and the possible loan of duplicate materials, would be to the advantage of all. The Connecticut Historical Society will do all in its power to make the League successful in its important program.

The League's first annual meeting will be held at the Christ Church Parish House, Guilford, Saturday, May 7, at 11:00 A.M. All members of the Society are cordially invited to attend.

* * *

Due to increased attendance at our monthly meetings, it was necessary to make arrangements with the Wadsworth Atheneum for use of the Morgan Lecture Room. This has many advantages, particularly its first floor location with entrance from Prospect Street. It is also possible to serve refreshments, which should add to the enjoyment of our meetings. Instead of being overcrowded when more than eighty members and friends turn out, we can now seat comfortably more than twice that number.

* * *

Another unusual imprint was recently acquired largely through the generosity of members. It is titled: *Proceedings of a general court martial,*

convened at Fish-Kill, on the 25th day of October, 1780, by order of His Excellency General Washington, Commander in chief of the army of the United States of America. On the tryal of Colonel Elisha Sheldon. Hartford: Printed by Hudson and Goodwin. M.DCC.LXXX. 19 cm. 16 pp.

Colonel Sheldon was tried on the following charges:

1. Injuring the public service, by discharging without proper authority, a number of men inlisted on Continental bounty, and encouragement to serve during the war.
2. Defrauding the public, by selling and exchanging away regimental horses, and converting the avails to his own use.
3. Defrauding the officers and soldiers of plunder taken in action, and converting the avails to his own private use.
4. With unofficer and ungentleman like behavior.

After a masterly speech by Colonel Sheldon in his own defence, he was acquitted with "Honor and Full Approbation."

The only recorded copy of this interesting pamphlet was destroyed by fire at the New York State Library in 1911.

SILK CULTURE

Ashford, Connecticut, July 16th 1805

Dr Sir

I arrived at this place about three weeks since, after a journey of more than 300 Miles, during which time I found my health fast increasing, & it is now tolerably well confirm'd. My cough has left me, altho' it troubles me at times, especially when I use any severe exercise — For this day or two past I have been exercis'd with the Dysentary, which has not yet left me; it is a very common complaint here, owing I presume to the extreme heat of the weather —

The Town is pleasant & healthy — but affords nothing of great curiosity. The Inhabitants are principally Farmers. There is considerable quantity of sewing silk manufactured here, the process of which is very singular, and worthy of particular attention. I have been at one place only, where they keep about 8000 silk worms & make from 7 to 10 lbs of silk annually. The moment the worms begin to wind their silk, they leave off eating, curl themselves up into a kind of pod which is of a texture something like parchment, and after remaining a few days, they are destroy'd in hot water, & the silk reel'd off. The few they reserve for propagation, deposit their eggs on white paper which are carefully tied up, & hung in the Cellar to preserve them from frost — The form & size of these insects, the changes they undergo, & their method of operating, exceed almost any thing of the kind I ever was acquainted with —

In those towns I pass'd through in Connecticut, I find the people greatly divided in political sentiments. They are infinitely more tenacious in this respect than they are with us, & it appears to me that *will* often takes the lead of *Interest* — They will scarcely believe a person to be honest, who differs from them in political opinion, let his character or property be what they

may. In Connecticut, (as in Vermont) they take advantage of the detestable practice of giving certificates to the Town Clerk which exonerate them from ministerial taxes. By this method men of talents are prevented from settling among them. Let a man's tenets be ever so agreeable, or his preaching ever so popular, at first, it renders his salary insecure, & his situation precarious — It makes the clergy dependent on the caprice of persons, who are more wanting in religious sentiment, than they are dissenting in religious principle, & leads to an unhappy division of families & societies, while at the same time it proves destructive of all church discipline —

The 4th of July was observ'd here almost with a *religious enthusiasm;* it is true, we had no fire works, or men who attempted to fly; but at the same time it was productive of as much real enjoyment & less deception. Different places produce different customs. You would have smil'd to have seen Ladies of almost every age marching in procession to & from the meeting house, dining with the company in a public bower, (erected for that purpose) & forming a conspicuous part of the whole assembly — People may say what they will respecting the happiness of a country life, for my part I discover but little to support it. An *Independent farmer* can live as he pleases; so can an independent mechanic or merchant. In many respects the farmer has the advantage over most others — he depends less than any class on the caprice of people, on the chances of business, or the fluctuation of foreign markets — If his labours are rewarded by a bad crop, or his expectations disappointed by drought, it does not materially affect him — It does not like the losses of the merchant, destroy the Capital he trades on — Yet he experiences the same cares & troubles of life, & the "sweat of his brow" is wrung as hard from him as from others. He may feel a superiour pride in the enjoyment of the hard earnings of his labour, while he boasts of the pain it cost him to acquire it — Yet after all, Content is not the growth of any particular country or clime — It dwells within the breast individually; and he who prides himself in the labour, the independency or the happiness of his situation in one particular calling, would perhaps been equally happy had heaven assign'd him any different condition or employment in life —

The season here has been uncommonly dry & sultry — we have had no rain for almost a month & the ground now almost crisps under your feet — Every thing suffers for the want of moisture. Last Friday the thermometer stood here (in the shade) at 94, & I have been inform'd that in Boston it stood at only 90. Had it been plac'd in the sun here, it would have been nearly 5 degrees above fever heat —

I have some expectations of visiting Hartford again tomorrow — if I should not I shall calculate on being with you in the course of a week, & if I do, I expect to return in 10 Days at the fartherst. With my best regards to Mrs. Child & family I remain yours, with sentiments of regard & esteem

John Howe

Mr Stephen Child
Roxbury
[Superscribed] Mr. Stephen Child, Roxbury, Massachusetts Mr Howe

The Price of these Bulletins is ten cents each.